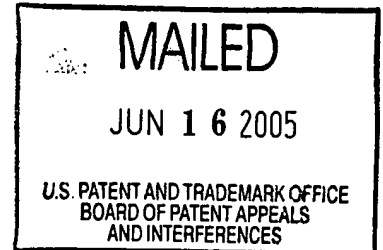


The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RICHARD W. DUCE,
KATHRYN M. MCCAULEY,
and RICHARD C. KUISELL



Appeal No. 2005-1255
Application No. 10/089,260

ON BRIEF

Before OWENS, KRATZ and PAWLIKOWSKI, Administrative Patent Judges.
KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-20. Claims 21 and 22, which are all of the remaining claims pending in this application, have been withdrawn from further consideration by the examiner as drawn to a non-elected invention.

BACKGROUND

Appellants' invention relates to a gas sensor and a method of making such a sensor. An understanding of the invention can be derived from a reading of exemplary claims 1 and 13, which are reproduced below.

1. A gas sensor, comprising:
a sensing element, having a lower portion disposed within a subassembly and an upper portion disposed within a wiring harness assembly comprising an upper shield disposed around a wiring harness;
a terminal support disposed within said wiring harness, wherein said terminal support comprising a channel extending therethrough, said channel comprising an indentation;
a first portion of a terminal disposed within said indentation of said terminal support and in electrical communication with said sensing element; and
an insulator at least partially disposed within said upper shield and around said sensing element upper portion, said insulator having a passage for receiving a second portion of said terminal.

13. A gas sensor, comprising:
a sensing element, having a lower portion disposed within a subassembly and an upper portion disposed within a wiring harness assembly comprising an upper shield disposed around a wiring harness;
a one-piece seal, said seal having a body disposed in a first portion of said upper shield, and a flange wherein an edge of said upper shield is disposed between at least a portion of said flange and said body;
a shell disposed around said lower portion of said sensing element;
a first insulator, wherein at least a portion of said first insulator is disposed between said sensing element and said shell;
a lower shield disposed around an end of said sensing element, said lower shield in physical contact with said shell, and having a plurality of apertures;
at least one terminal in electrical communication with said sensing element; and
a terminal support in physical contact with said terminal.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

| | | |
|--------------------------------|-----------|----------------------------|
| McClanahan et al. (McClanahan) | 5,329,806 | Jul. 19, 1994 |
| Kuisell et al. (Kuisell) | 5,817,920 | Oct. 06, 1998 |
| Kato et al. (Kato) | 5,948,963 | Sep. 07, 1999 ¹ |

Claims 13, 16 and 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by McClanahan. Claims 1-13 and 16-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuisell in view of McClanahan. Claims 14 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuisell in view of McClanahan and Kato.

We refer to the brief and to the answer for a complete exposition of the opposing viewpoints expressed by appellants and the examiner concerning the issues before us on this appeal.

OPINION

Upon careful review of the respective positions advanced by appellants and the examiner with respect to the rejection that is before us for review, we find ourselves in agreement with

¹ The examiner's inadvertent failure to list this reference in the Prior Art of Record section of the answer at page 3, item No. 9 represents harmless error because the record reflects that appellants were aware of the examiner's reliance on that reference. See pages 4 and 8 of the brief and pages 4 and 5 of the answer.

appellants' viewpoint in that the examiner has failed to carry the burden of establishing a prima facie case of anticipation or obviousness. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1471-1472, 223 USPQ 785, 787-788 (Fed. Cir. 1984). Accordingly, we will not sustain the examiner's rejections.

§ 102(b)

Concerning the anticipation rejection of claims 13, 16 and 17, we note that all of those claims require that the claimed gas sensor include a one-piece seal that comprises a body disposed in a portion of an upper shield of the sensor and a flange arranged such that "an edge of said upper shield is disposed between at least a portion of said flange and said body" as recited in independent claim 13.

Respecting that claimed one-piece seal limitation, the examiner takes the position (answer, page 5) that:

Figures 2 and 3 of the '806 patent show a one-piece "cap 38" which has the claimed structure (see column 2, lines 60-64). The part of the cap referred to as the seal [64] is joined with the cap to form a one-piece structure which is then inserted into the gas sensor support structure to seal the upper assembly. Note that something that is in "one-piece" may have previously been assembled from multiple components; the seal composed of joined parts 38 and 64 is clearly in one piece at the time of joining to the rest of the sensor assembly as shown in Figures 2 and 3. It is

important to note that "one-piece" does not require the structure to have been formed integrally or of a single material.

However, as correctly explained by appellants in the brief, the cap and seal combination of McClanahan would not, through the lens of one of ordinary skill in the art, reasonably constitute a one-piece seal as here claimed. In this regard, we construe the contested claim limitation by giving that term the broadest reasonable meaning as it would be understood by one of ordinary skill in the art when construed in light of the application specification. In so doing, we find that the claim term, "one-piece seal" is employed in appellants' specification by way of reference to element 40 of the drawings, to describe a seal made of one piece, not two or more pieces.² Moreover, the

² See the patent application (U.S. Patent Application No. 10/110,021) incorporated by reference at page 5 of appellants' specification. U.S. Patent Application No. 10/110,021 is the national stage entry of international application PCT/US00/41614. In this regard, we note that the published copy of PCT application number PCT/US00/41614 (World Intellectual Property Organization publication number WO 01/35087) is of record in the subject application file. At page 9 of that published PCT application No. PCT/US00/41614, a one-piece seal is distinguished from a conventional two-piece boot (cap) and seal. Prior to final disposition of the application, the examiner should determine whether or not the Office requirements for material that is incorporated by reference have been satisfied. See section 608.01 (p) of the latest revision of the eighth edition of the Manual of Patent Examining Procedure.

In addition, we note that the examiner's comments at page 6,

applied McClanahan patent is consistent in that the included Figure 7 embodiment is described as including a "single piece tubular shell" wherein the shell is made of one piece whereas; in contradistinction, other disclosed embodiments (see, e.g., Figures 2, 3 and 6) where the shell includes a number of pieces, such as upper and lower shells and a body located between those separate shell pieces, are not described as single piece shells.

Thus, the examiner's assertion that the separate cap (38) and seal (64) of McClanahan represents a single-piece as claimed is inconsistent with how one of ordinary skill in the art would have interpreted appellants' use of that term in the claims in the context as used therein. Looked at another way, the examiner's position involves a misconstruction of the applied reference as it would be understood by one of ordinary skill in

section 608.01 (p) of the latest revision of the eighth edition of the Manual of Patent Examining Procedure.

In addition, we note that the examiner's comments at page 6, first full paragraph of the answer are clearly incorrect in that it is possible that more than one application could contain the same or similar disclosures, as well as claims. Whether another, presumably commonly owned, U.S. patent application (see, e.g., U.S. Patent Application No. 10/110,021) includes claims that may be conflicting with subject matter here claimed is a matter that presumably was investigated and appropriately considered as part of the examination performed by the examiner, in the first instance. If not, the examiner should undertake such a review of the related applications prior to final disposition of this application.

description of items that are made of a single piece and those that are not made of a single-piece.

Consequently, on this record, we reverse the examiner's anticipation rejection.

§ 103(a) Rejections

Concerning the examiner's obviousness rejections as they apply to claims 13-20, the examiner acknowledges that Kuisell does not disclose a one-piece seal. In this regard, the examiner relies on McClanahan for disclosing the recited one-piece seal and for the obviousness of using such a seal in Kuisell. However, for reasons discussed above, McClanahan does not disclose the one-piece seal limitation of independent claim 13. Nor has the examiner otherwise fairly established how McClanahan in combination with Kuisell would have suggested such a seal to one of ordinary skill in the art on this record.³ It follows

³ The examiner additionally relies on Kato in a separate obviousness rejection of dependent claims 14 and 15. However, the examiner has not explained how the addition of Kato would cure the above-noted deficiencies in the rejection of the subject matter of independent claim 13 over Kuisell in view of McClanahan. In this regard, the examiner does not rely on Kato for a teaching of the one-piece seal limitation required by claims 14 and 15, by virtue of their dependency on claim 13. Consequently, the examiner's obviousness rejection of claims 14 and 15 falls short in establishing the obviousness of the claimed subject matter for the reasons discussed above with respect to claim 13.

that we cannot sustain the examiner's § 103(a) rejections as they apply to claims 13-20.

With regards to the other claims rejected over the combined teachings of Kuisell and McClanahan, the examiner takes the position that Kuisell discloses or suggests a gas sensor and a method of making such a sensor as recited in independent claims 1 and 7 but for the required terminal support channel indentation. In this regard and considering appealed claim 1, the examiner maintains that Kuisell discloses "an oxygen sensor comprising sensing element [44], subassembly [50], upper shield [63], ceramic terminal support [72], and alumina insulator [62] having passageway for receiving terminals [66, 68], connected in the claimed manner; see Figure 1 and columns 2-5" (answer, page 3).

The examiner (answer, page 4) asserts that:

it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the . . . alternative terminal support structure . . . of McClanahan (column 1, lines 41-54), and to obtain the advantage of fixing or restricting the location of the terminal in the support.

However, as explained by appellants in the brief, the sensor structure of McClanahan is significantly different in the structure of Kuisell and the examiner has not reasonably established any incentive to embark on a significant

reconstruction of the sensor of Kuisell based on the combined teachings of McClanahan and Kuisell. In this regard, Kuisell (column 3, lines 52-54) employs a terminal adapter or support (72) with cylindrical openings (122, 124), in which terminals 70 and 71 fit tightly. A seal and metal retainer therefore are located above the terminal support. The metal retainer includes a lower end that is fit snugly over an upper end of the upper shield of the sensor. See column 3, lines 54-65 of Kuisell. The upper shield is protected by an outer protective shield (90). See, e.g., column 2, lines 10-29, column 3, line 66 through column 4, line 18 and column 4, line 64 through column 5, line 12 of Kuisell.

On the other hand, McClanahan discloses a sensor that does not include a top cable seal that is separate from a terminal support having cylindrical channels and a sensor that does not include an outer shield that protects the upper shield. While McClanahan does appear to suggest a sensor that includes an indentation in a terminal plug support/seal (64) channel, that fits in an cap (38), which cap locks onto the upper shield (32), the examiner has not articulated a reasonable explanation establishing why one of ordinary skill in the art would have been led to modify the sensor arrangement of Kuisell based on the

disparate structure of McClanahan in a manner so as to arrive at the claimed subject matter based on such a modification of Kuisell. See appellants' arguments at pages 6 and 7 of the brief. The examiner's comments at page 7 of the answer appear misplaced in that replacing the seal (80) of Kuisell with the seal (64) of McClanahan would not even suggest a change in the terminal adapter support (72) of Kuisell. As shown in Kuisell, the terminals do not extend into the seal (80). Thus, changing the seal (80) of Kuisell based on the teachings of McClanahan as proposed by the examiner would not result in an indented channel in the terminal support (72).

On this record, we reverse the examiner's § 103(a) rejections.

REMAND

In arguing against the examiner's § 102(b) rejection over McClanahan, we note that appellants did not dispute the examiner's determination that McClanahan disclosed the structure required by any of claims 13, 16 and 17 but for the one-piece seal limitation of claim 13. That claimed structure included, inter alia, a sensing element, a terminal support, an upper shield, an insulator and a terminal in electrical communication with the sensing element. With that in mind, we note that claims

1-12 do not require a one-piece seal. Considering claim 1, for example, we further note that appellants have not disputed that McClanahan employs a seal/terminal support (64) that includes a channel with an indentation therein, as asserted by the examiner in the examiner's § 103(a) rejection over Kuisell in view of McClanahan.

Given the above, the examiner should determine whether or not McClanahan discloses or suggests structure corresponding to at least claim 1 including a sensing element (42) corresponding to the sensing element of claim 1, a plug terminal support (64) with an indented channel corresponding to the claimed terminal support, a terminal (54) with a portion that is structured to be disposed in the channel indentation as claimed, and an insulator (44) structured as claimed.

If so, the examiner should consider whether introducing a rejection of at least claim 1, as well as any of claims 2-12, under § 102(b) and/or § 103(a) over McClanahan is appropriate.

In addition, we note that the examiner has indicated in a communication mailed January 25, 2005 that U.S. Patent No. 6,315,880 represents prior art that is highly relevant to the claimed subject matter. Consequently, as part of this remand, the examiner should determine whether the claims of this

application are patentable over that later reference alone or in combination with any other reference(s) that the examiner may be aware of.

As a final point, we note that each of independent claims 1, 7 and 13 recite both a wiring harness assembly and a wiring harness, the latter harness about which an upper shield is recited as being disposed. At page 5 of appellants' specification, a wiring harness assembly (12) is referred to. That assembly is depicted in drawing Figure 2 as including much of the upper structure of the oxygen sensor. At page 6, of appellants' specification, a wiring harness is also referred to as being represented by element (12) of the drawing figures and is described as being connected to the vehicle electrical system via cables 64 and 65. The examiner should review the specification and drawings and determine whether or not the language of the claims regarding "a wiring harness assembly comprising an upper shield disposed around a wiring harness" is reasonably descriptive of the subject matter described in the disclosure and whether that claim language is consonant with all of the requirements of § 112. If not, the examiner should introduce an appropriate ground of rejection.

CONCLUSION

The decision of the examiner to reject claims 13, 16 and 17 under 35 U.S.C. § 102(b) as being anticipated by McClanahan; to reject claims 1-13 and 16-20 under 35 U.S.C. § 103(a) as being unpatentable over Kuisell in view of McClanahan; and to reject claims 14 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Kuisell in view of McClanahan and Kato is reversed.

REVERSED/REMANDED

Terry J. Owens
TERRY J. OWENS

Administrative Patent Judge

Peter F. Kratz

PETER F. KRATZ

Administrative Patent Judge

Beverly A. Pawlikowski

BEVERLY A. PAWLIKOWSKI

Administrative Patent Judge

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